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Quality on Tap

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Los Angeles Water Supply . . does it make the grade?

As a Los Angeles Department of Water and Power customer, you have the right to expect high quality drinking water . . . and high quality drinking water is what you're getting.

Los Angeles residents have trusted their water supply for more than 80 years, and we want to keep that trust. However, recent media attention, focusing on extremely minute traces of contaminants in the water supply, has raised customer concerns about quality. While we readily recognize there is a problem with groundwater contamination, we want to assure our customers that the safety of our water supply is not affected

The intent of this booklet is not to sway our customers from purchasing bottled water or installing home water treatment units. That's your preference. Since the sale of drinking water accounts for only a small fraction of 1 percent of DWP total water sales, we are not promoting drinking water sales for financial gain.

However, we believe you should be aware that you are receiving safe and good quality water from your tap. If you prefer the taste of bottled water or home treated water, we encourage you to make sure you're getting full value for your money.

The following information will provide facts to help you make an informed evaluation of your water quality. You be the judge . . . does it make the grade?

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Owens River and Mono Basin Watersheds

Until the advent of drinking water treatment in the early 19th century, waterborne disease was one of the world's most serious health threats. Hundreds of thousands of people died every year from diseases such as typhoid or cholera.

Today's stringent health standards and the treatment of drinking water have saved more lives than all the doctors and hospitals in history.

Quality Water at the Source

Los Angeles receives its water supply from three sources — the Owens River/Mono Basin via the Los Angeles Aqueduct System, the San Fernando Valley Groundwater Basin and the Metropolitan Water District.

Whatever the source, the tap water you receive meets stringent state and federal guidelines for drinking water quality. The DWP's water quality laboratory continuously monitors the water supply to ensure its safety. This is not to say, however, that these water sources are without issues or potential issues which could impact upon quality.

The majority of the city's water supply, about 80 percent, comes via aqueduct from the Owens River and Mono Basin watersheds — areas of natural streams fed by the melting snow of the Eastern Sierra Nevada. Located 300 miles north of Los Angeles, this is a region of few towns, some agriculture and no heavy industry.

The DWP has taken extensive measures to protect the water supply once it enters the Los Angeles Aqueduct System and city distribution system. From a point about 200 miles north of Los Angeles, the Eastern Sierra water supply is protected from any human contact. Enroute to the consumer, it is disinfected with chlorine and then stored away from public access. Finally, as the water enters the city distribution systems, it is again chlorinated as an added safeguard of wholesomeness.

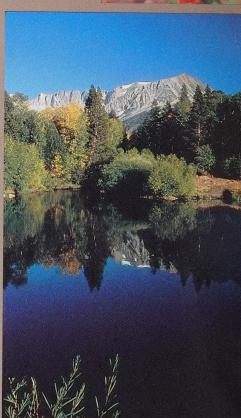


Since the Los Angeles Aqueduct source water is so pure, the chance that harmful germs will be present even before treatment is relatively small. Still, the DWP treats and monitors the water with vigilance to be certain that no harmful microorganisms ever reach the consumer.

The Issues

Water from the Owens River-Mono Basin watershed meets all stringent state and federal water quality standards except for the turbidity (cloudiness) standard. Turbidity itself is not harmful to health, but it can, under some circumstances, make it necessary to add more chlorine to kill bacteria in the water.





In addition, low levels of trihalomethanes (THMs) have been detected in water from the Eastern Sierra watershed. THMs are a term used to describe four chemical compounds, the most prevalent being chloroform. These chemical compounds are formed when chlorine combines with naturally present organic material in the water

There is no way to determine if trace levels of THMs really present a health risk, but there is some evidence that, if consumed in extremely large quantities over long periods of time, they may increase cancer rates in laboratory animals. The levels fed to laboratory animals in these tests are from 10,000 to 1 million times higher than those found in drinking water.

levels of nt a health ome evisuantities and tancer rates. Some of these known carcinogens include aflatoxin, a mold carcinoger found in peanut butter and tortillas; hydrogen peroxide present in coffee; formaldehyde found in cola beverages; nitrosamines present in beer; and carcinogenic mold toxins found in organic fruit juices.

For drinking water, federal standards require that THM levels remain below 100 parts per billion (ppb), which is equal to about one drop in 132 gallons of water. The THM level detected in water from the Eastern Sierra watershed is about 40 ppb — a level well below the present federal standard.

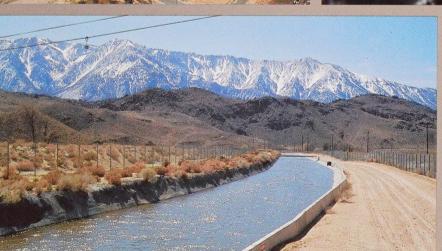
The Approach

A \$146 million filtration plant, completed in late 1986, allows us to comply with the federal turbidity standard. The facility in Sylmar, uses state-of-the-art technology to treat up to 600 million gallons of water per day. It filters Los Angeles Aqueduct water, resulting in clearer and better tasting water.

Another benefit of the filtration facility is a reduction—by as much as 50 percent—in THMs because of the use of ozone disinfectant in the initial treatment process.







San Fernando Valley Groundwater Basin

The San Fernando Valley Groundwater Basin provides 15 percent of Los Angeles' water supply, enough to serve 500,000 people. Substantial amounts of water from this basin also are used by the cities of Glendale, Burbank, La Crescenta and San Fernando.

The basin also acts as a huge underground storage reservoir with enough capacity to supply a million people during a drought. The groundwater basin is replenished during years of abundant water supplies.



The Issue

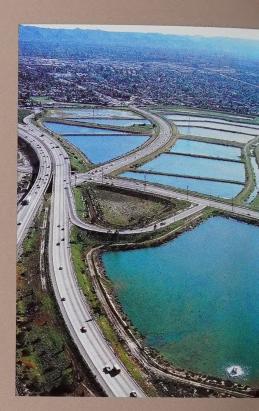
In 1980 when newly available sensitive monitoring equipment was applied to water analyses, traces of an industrial solvent, trichloroethylene (TCE), were found in about half of the 90 wells tested in the San Fernando Valley Basin.

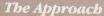
Another industrial solvent, perchloroethylene (PCE), and smaller amounts of other industrial chemicals also were found in about 15 percent of the wells. These industrial solvents have been widely used for degreasing machinery, dry cleaning and metal plating since the 1930s. The use of TCE has been virtually eliminated since 1966 when restrictions were placed on its use; however, PCE is still widely used in dry cleaning establishments and industry.

You might think that groundwater contamination is a new problem, but it isn't. Traces of contaminants have probably existed in this groundwater source since at least the World War II period, but remained undetected until monitoring equipment became available.

Presently, contaminants are located primarily in the upper zone of the groundwater basin; however, evidence shows that contamination is spreading.

The problem we face is two-fold: eliminating the causes of contamination and reducing or eliminating the contamination already present.





The groundwater supply, despite its contamination problem, is not a health hazard and continues to meet all action levels and standards set by the state Department of Health Services.

The problem of existing contamination has been temporarily dealt with by shutting down the more highly-contaminated wells. Some wells with lower levels of TCE and PCE are blended with other wells or Los Angeles Aqueduct water to dilute contaminant concentrations to meet state Department of Health Services action levels. All water served to DWP customers is below the state action levels of five parts per billion for TCE and four parts per billion for PCE.



The San Fernando Valley Groundwater Management Plan, the result of a two-year study funded by the U.S. Environmental Protection Agency (EPA), recommended cleanup suggestions and ways to protect the groundwater basin from further contamination. Among the recommendations offered were the installation of sewers for industrial areas in the San Fernando Valley, a collector program for small hazardous waste generators and a city ordinance requiring testing of underground tanks.

Since then, the Los Angeles City Council has passed ordinances requiring private uncontrolled disposal systems to connect with the city sewer system. In addition, the city has implemented a program to detect and prevent leakage of underground tanks.

In 1986, the DWP submitted an application to the EPA which would allow us to be the lead agency in performing a remedial investigation of the ground-water basin which will lead to long-term optimum clean-up measures. The EPA has designated the ground-water basin area as a federal Superfund site, which means that federal funds can be used to finance cleanup projects.

The city has advanced funds to initiate the remedial investigation, while awaiting for Congress to reauthorize Superfund program funds.

In addition, the DWP is proposing the construction of an aeration facility in the North Hollywood-Burbank portion of the groundwater basin to remove TCE and PCE. The contaminated groundwater will be pumped through a collector line to the top of a tower. As the water falls by gravity through the tower, it is aerated, causing the very small quantities of TCE and PCE to evaporate and dissipate into the air. Prompt implementation of the project will stop the spread of contaminants and reduce the need for a larger scale project in the future.

Metropolitan Water District

The remaining 5 percent of Los Angeles' water supply comes from the Metropolitan Water District (MWD). The MWD delivers water on a wholesale basis to Southern California water purveyors. This water originates from the Colorado River or from the Sacramento River Delta via the State Water Project.

The Issue

In 1974, trihalomethanes were detected in MWD's water supply. As water from the State Water Project flows through the Sacramento-San Joaquin Delta, it picks up organic materials from riverbeds. These natural organic compounds combine with chlorine, added to kill waterborne bacteria, to form THMs.

As Arizona begins to exercise its increased rights to Colorado River water, MWD will be relying more on supplies from the north — supplies higher in organics and thus having potentially higher THM content. With continued use of the chlorine-only system, unacceptable THM levels would have been likely.







The Approach

For this reason, MWD switched to using chloramines rather than chlorine as its primary disinfectant.

Chloramines, a combination of chlorine and ammonia, have been used for decades in other cities, including Portland, Denver, Houston and St. Louis.

Because THMs are low in Los Angeles Aqueduct water and local well water, the DWP will continue to use chlorine as a disinfectant. However, because we purchase 5 percent of our water from the MWD, some



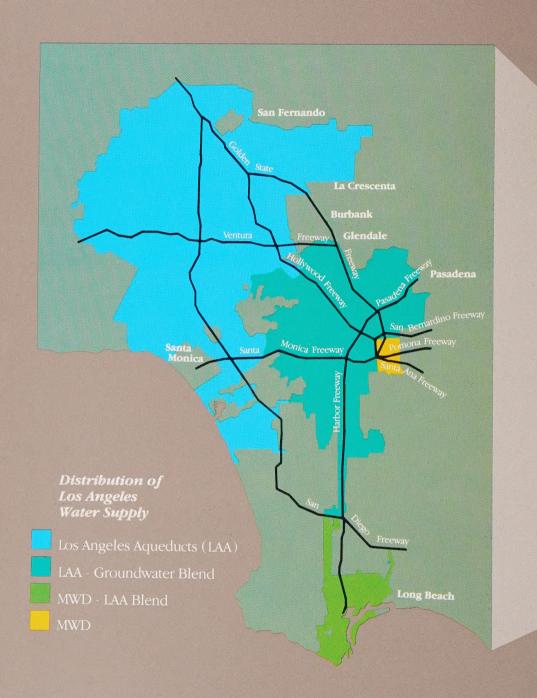
of our customers will receive chloraminated water.

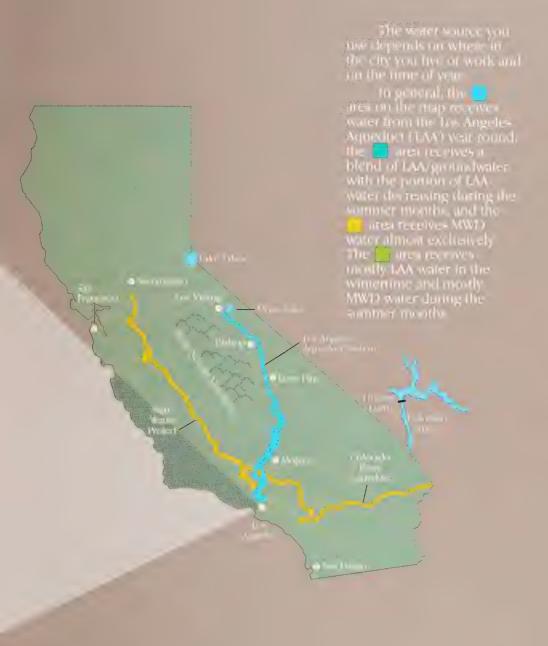
While some areas of Los Angeles receive MWD water, all areas could receive MWD water under certain conditions. So, all DWP customers should know how chloramines affect them.

Unless you are a fish hobbyist or a kidney dialysis patient, you have nothing to worry about. Water used in fish aquariums and water used in kidney dialysis equipment must be treated to remove chloramines.

There are fairly simple effective ways to eliminate chloramines. For kidney dialysis equipment, two quite simple methods will effectively remove chloramines: the addition of ascorbic acid or the use of granular activated carbon.

Unlike chlorine which can be removed from water just by exposing it to air for a few days, chloramines for fish tanks or ponds must be neutralized with the same chemicals used to eliminate chlorine. Granular activated carbon, the popular filter material used in aquariums, also removes the disinfectant. The staff at local pet and aquarium-supply stores should offer advice about both methods, recommend a specific chemical or carbon, and determine how long the water must be exposed to either material to make it safe for fish.





Quality at the Tap

Los Angeles city water consistently meets all fed end and some water quality standards except for transition has not only sule, it is absence of the best quality waters in the nation.

Whatever the source, the LWP continuously monatom the safety of the water supply. DWP's water quality laboratory is one of the longest, most well-equipped water laboratory and licki unabyes are made anomally resing for bucueriological, chemical, physical and radiological, quality.

The DWP carefully

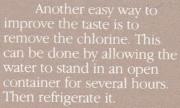
The DWP carefully useds and monitors your water to ensure that it consults no harmful bacteria (perms). Our success is shown by the fact that our water always meets—and is 5-10 times below—the allowable limit for bacteria to drinking water.

Unlike many large cities, the Los Angeles Owens liver/Mono Bosti water shod is prorested from poliution. Therefore, the chance that harmful germs will be present even heli geresoment is relatively small. Sulf, the DWP beats and monitors the water with vigilance in the certain that to hamiful normologarisms over reach the consumer. Chemical substances and minerals also are closely monitored to ensure sale fevels. Most minerals found in drinking water are not learnful in health. Many, such as calcium and magnestum, are nearons the body needs. Although some minerals can be found in high quantities, these minerals are either not found on the loss Angeles watershed or are found only at trace levels several studies conducted in Europe inclease people drinking hard water had lower levels of heart diverse than people drinking with water.



For nearly all water consumers, the quality of tap water is not judged by the more objective ways water quality can be defined, but by its appearance and taste.

If you're satisfied with tap water and don't wish to spend the higher cost of bottled water, but would like to improve its taste, there are two very easy methods you might try. The first is to simply refrigerate it. Recent studies have shown that people frequently prefer the taste of tap water to bottled water and cannot distinguish a difference if the tap water is chilled.



Try these methods you'll be pleasantly surprised.

If, however, you prefer the taste of bottled water or you're buying it because you think its safer to drink, please remember that bottled water and tap water must both meet the same stringent state and federal guidelines.

In fact, a 1985 study conducted by the California Assembly, Office of Research, disclosed that bottled water buyers may not be getting full value for their money. The study showed that some bottled waters have been found to contain levels of arsenic, fluorides and nitrates exceeding drinking water standards. In addition, potentially high levels of organic compounds also were found in bottled water.

Since the sale of drinking water accounts for a small fraction of total water sales (less than 1 percent), the DWP does not benefit financially by promoting the use of tap water for drinking. We feel that you should know that if you are purchasing bottled water only because you feel it is safer to consume, you should be aware that your tap water is wholesome and safe.

Some customers may consider a home water treatment unit. Many of these units, if properly maintained, can provide some improvements in tap water quality. For example, granular activated carbon, under-the-sink filters can remove chlorine odor and organic material from the water; reverse osmosis fil ters and ion-exchange resins (water softeners) will soften the water.

These units, however, are not problem free. Carbon filters, for example, can allow large numbers of bacteria to grow on them unless the filters are properly maintained.





Los Angeles Aqueduct water contains low levels of minerals, primarily calcium and magnesium, which cause hardness in water. Therefore, customers living in areas of the city receiving this water or a blend consisting primarily of Aqueduct water would not benefit from installing a home water softening unit.

Customers in other parts of the city receiving slightly harder water might weigh the cost of a water softening unit against the reasons for installing the unit and its benefits. If you're considering a unit to improve the effectiveness of laundry detergent, think twice. A very effective and economical way to soften water is by using detergents or laundry additives which contain water softening agents. Try this method before spending the additional money on a home water softening unit.

There are other points to consider about home water softening units. Reverse osmosis filters will soften water, but will also remove *all* minerals from the water. This results in

a flat, unpleasant-tasting water, lacking in important nutrients.



Ion-exchange resins produce soft water, but they exchange sodium for the calcium and magnesium in the water. Many people have excess levels of sodium already in their diets, but frequently need the calcium and magnesium naturally found in unsoftened water.

If you plan to purchase a home water treatment unit because you prefer the taste of home filtered water, beware of fraudulent solicitors who misrepresent products or make false claims. Home water treatment devices can range in price from \$200-300 for a granular activated carbon, under-the-sink system to \$400-1,500 for a water softening system. Since the costs vary widely, shop around and make sure you are getting full value for your money. If financing is needed in the purchase of the unit, read the contract carefully, for a lien may be placed on your home.

Also beware of doorto-door solicitors representing themselves as DWP employees. The DWP does not have representatives sell ing home filtering units nor has it contracted with any firm for this service.

If you have concerns about claims being made by home water treatment unit solicitors regarding the quality of your tap water or the need to treat it, please call us at (213) 481-3131.

We hope this brochure has helped you make an nformed evaluation of your water supply.



